

DEPARTMENT OF THE INTERIOR,

U.S. CENSUS OFFICE. 11th Census, 1890

ROBERT P. PORTER,
Superintendent.

Appointed April 20, 1889; resigned July 31, 1893.

CARROLL D. WRIGHT,
Commissioner of Labor in charge.
Appointed October 5, 1893.

VITAL STATISTICS

OF

BOSTON AND PHILADELPHIA

COVERING A PERIOD OF

SIX YEARS ENDING MAY 31, 1890.

JOHN S. BILLINGS, M. D.,

DEPUTY SURGEON-GENERAL, U. S. ARMY, EXPERT SPECIAL AGENT.

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,

WASHINGTON, D. C., July 28, 1894.

SIR:

I have the honor to transmit the following special report upon the Vital Statistics of Boston, Mass., and Philadelphia, Pa., by Dr. John S. Billings, United States army, expert special agent of the Census Office. The statistics and illustrations presented have been prepared by Mr. William A. King, chief of the division of vital statistics.

This report presents a number of features which are new in the line of census work, such as the subdivision of the cities into sanitary districts and the analyzation of the effect of immediate surroundings of stated conditions upon the death rates of different races and classes of people. The influence of heredity, as derived from the mother, is also shown.

In addition to the usual returns for the census year ending May 31, 1890, this report covers a further period of 5 years preceding that period, making a complete record for 6 years, and adding largely to the value of conclusions which may be based upon the results shown.

As in the preceding reports upon the Vital Statistics of Baltimore, Md., and the District of Columbia; New York city and Brooklyn, N. Y., the source of information was the registration records of the local boards of health, containing the certificates of death furnished by attending physicians, and is therefore much more accurate as to the number and more reliable as to the data than any report based upon the returns of the census enumerators could be.

Very respectfully,

CARROLL D. WRIGHT,
Commissioner of Labor in charge.

The SECRETARY OF THE INTERIOR.

VITAL STATISTICS

OF

BOSTON AND PHILADELPHIA.

COVERING A PERIOD OF SIX YEARS ENDING MAY 31, 1890.

BY DR. JOHN S. BILLINGS, U. S. ARMY, EXPERT SPECIAL AGENT.

The following special report, with tables and illustrations, relates to the vital statistics of Boston, Mass., and Philadelphia, Pa., for the period of 6 years ending May 31, 1890. The tables and illustrations have been prepared under the direction of Mr. William A. King, chief of the division of vital statistics, and of Mr. Alonzo W. Shunk.

The data used in the computations are the population figures for June 1, 1880, and June 1, 1890, and the number of deaths occurring during the 6 years and during the year ending May 31, 1890, the first being referred to as the "6-year period" and the latter as the "census year". The unit of area in Philadelphia is the ward, and in Boston either the ward or a subdivision of the ward known as a "sanitary district". The boundaries of these last had been fixed prior to the enumeration and copying of the records of deaths, with reference to geographical features, character of inhabitants, and of residences, etc.

The returns of deaths from which these statistics have been made up were obtained from the local registration records of the two cities, based upon physicians' certificates of deaths filed under compulsory registration laws.

In most of the certificates the locality in which the death occurred was indicated by the street and house number. For the deaths which occurred in hospitals and other institutions, the locality from which each person dying in the hospital was received was obtained from the institution records as far as possible and the proper reference then made.

Those cases which it was impossible to assign to any ward or district are designated in some of the tables as "unlocated", and in the small rate tables these have been distributed among the sanitary districts upon the assumption that they belonged to the several districts in the same proportion as did those for whom a location could be assigned.

The distribution, whenever practicable, of all unknown details concerning either population or deaths, such as unknown ages and unknown nativities in the calculation of rates, must be borne in mind, since for this reason certain details of population and deaths do not agree with other statements in which such distribution has not been made.

Table 1 gives the data for certain comparisons between Boston and Philadelphia, the figures relating to June 1, 1890.

TABLE 1.

SUBJECTS.	Boston.	Philadelphia.	SUBJECTS.	Boston.	Philadelphia.
Population June 1, 1890.....	448,477	1,046,964	Parks:		
Area in acres (land surface).....	24,231	82,807	Area in acres	1,130	3,025
Persons to each acre.....	18.51	12.64	Water surface	56	373
Dwellings:			To each 1,000 persons	2.52	2.89
Number	52,060	187,052	Per cent of city area in	4.66	3.65
To each acre	2.17	2.26	Cemeteries (intramural):		
Persons to each	8.52	5.60	Area in acres	613	1,205
Water supply:			Per cent of city area in	2.53	1.46
Daily consumption in gallons.....	39,900,000	116,500,000	Saloons:		
To each person.....	88.97	111.27	Number	505	1,203
Sewers:			To each 1,000 persons.....	1.33	1.15
Miles of.....	291	376	Railroads:		
Persons to each mile	1,541.16	2,784.48	Trains daily	854	636
House connections.....	52,000	100,000	Annual passengers	39,107,897	15,152,999
			Commuters	24,587,218	10,713,858

VITAL STATISTICS.

The areas given in the preceding table were obtained by planimeter measurements of the maps used in illustrating this report. The areas of parks and cemeteries include only so much of these as are actually within the city limits.

These figures show that Boston was the more densely populated of the two, having over 50 per cent more people to each dwelling than Philadelphia. The open space in the form of parks was proportionately greater in Boston, and a much larger proportion of the business population lived outside the city limits than was the case for Philadelphia.

Tables 82 and 90 show the number of deaths from each specified disease and class of diseases which occurred in Boston and Philadelphia, respectively, during the 6 years ending May 31, 1890, with distinction of sex and of quinquennial age periods.

The total number of decedents in Boston during the 6 years was 60,021, of whom 30,248 were males and 29,773 were females. In Philadelphia the number of decedents was 134,878, of whom 68,963 were males and 65,915 were females.

The mean population of Boston for the 6-year period was 419,005 and that of Philadelphia was 975,920.

During the same period the average annual death rate in Boston, exclusive of stillbirths, was 23.59, and in Philadelphia 21.86 per 1,000 of mean population. For the census year alone the death rates per 1,000 of population were: in Boston, 23.44; in Philadelphia, 21.29.

A comparison of these death rates with those of certain other of the principal registration cities during the census year, both inclusive and exclusive of stillbirths, is contained in Table 2. The population used in computing these rates is that of June 1, 1890, and not the mean population for the census year.

TABLE 2.

CITIES.	DEATH RATES PER 1,000 OF POPULATION.								
	Including stillbirths.					Excluding stillbirths.			
	Aggregate.	White.			Colored.	Aggregate.	White.		Colored.
		Total.	Native.	Foreign.			Total.	Native.	
Aggregate.....	23.30	22.78	24.05	20.18	33.64	21.62	21.15	21.63	30.86
Allegheny.....	20.15	20.06	19.83	20.73	24.13	18.17	18.03	17.11	23.74
Baltimore.....	24.75	22.61	22.37	23.68	36.41	22.89	21.05	20.44	32.94
Boston.....	24.79	24.62	25.94	22.24	33.29	23.44	23.29	23.87	31.08
Brooklyn.....	25.54	25.41	26.55	23.06	34.99	23.89	23.75	24.08	34.08
Buffalo.....	19.90	19.83	21.36	17.00	34.22	18.38	18.32	19.03	31.65
Chicago.....	21.06	21.03	25.42	14.82	23.30	19.05	19.01	21.98	22.08
Cincinnati.....	22.36	21.93	20.77	25.38	33.04	21.00	20.64	19.06	29.61
Cleveland.....	21.95	21.83	25.91	15.04	31.63	20.21	20.10	23.13	29.98
Denver.....	24.21	24.56	26.25	19.15	15.48	23.00	23.34	24.65	14.25
Detroit.....	20.42	20.36	24.32	14.43	23.45	18.70	18.62	21.42	22.87
Indianapolis.....	18.85	17.78	17.51	19.31	30.04	17.82	16.35	15.82	27.54
Jersey city.....	27.51	27.48	29.21	23.98	29.50	25.63	25.61	26.43	26.82
Kansas city.....	19.24	17.54	16.88	20.69	33.75	17.30	15.74	14.70	30.63
Louisville.....	21.81	19.61	18.20	26.13	31.98	20.09	18.16	16.45	28.98
Milwaukee.....	19.28	19.26	21.06	16.46	25.70	18.78	18.76	20.23	25.70
Minneapolis.....	14.81	14.76	17.52	10.08	20.68	13.54	13.48	15.49	21.64
Newark.....	29.04	28.67	30.81	23.94	44.40	27.40	27.07	28.40	41.44
New Orleans.....	28.40	25.41	22.37	38.32	36.61	26.26	23.57	20.08	33.65
New York.....	28.63	28.47	32.23	23.44	37.47	26.45	26.31	28.45	34.63
Omaha.....	9.95	9.96	10.58	8.19	9.45	9.43	9.43	9.86	9.45
Philadelphia.....	22.07	22.28	23.04	20.19	32.42	21.29	20.93	21.19	30.33
Pittsburg.....	21.82	21.56	22.77	18.97	29.16	20.13	19.91	20.34	23.64
Providence.....	22.36	21.07	23.16	19.37	34.81	21.12	20.76	21.39	32.54
Rochester.....	17.35	17.39	16.87	18.62	6.92	17.32	17.36	16.83	6.92
St. Louis.....	19.14	18.15	17.21	20.70	34.55	17.38	16.50	14.95	31.11
St. Paul.....	16.82	16.74	21.25	10.08	23.62	14.88	14.78	17.96	22.97
San Francisco.....	23.61	25.57	22.18	25.88	24.06	22.46	22.32	20.19	23.74
Washington.....	25.85	19.79	18.62	28.46	38.22	23.65	18.57	17.23	34.03

The term "colored", as used in this discussion, includes Chinese, Japanese, and Indians with those of negro descent where not otherwise specified. The number of those not of negro descent in these cities is too small to affect percentages appreciably.

Comparisons of mere gross death rates for a single year give results of little value in determining the relative healthfulness of different localities, but when they can be made for a considerable series of years more reliable conclusions can be drawn from them.

BOSTON AND PHILADELPHIA.

3

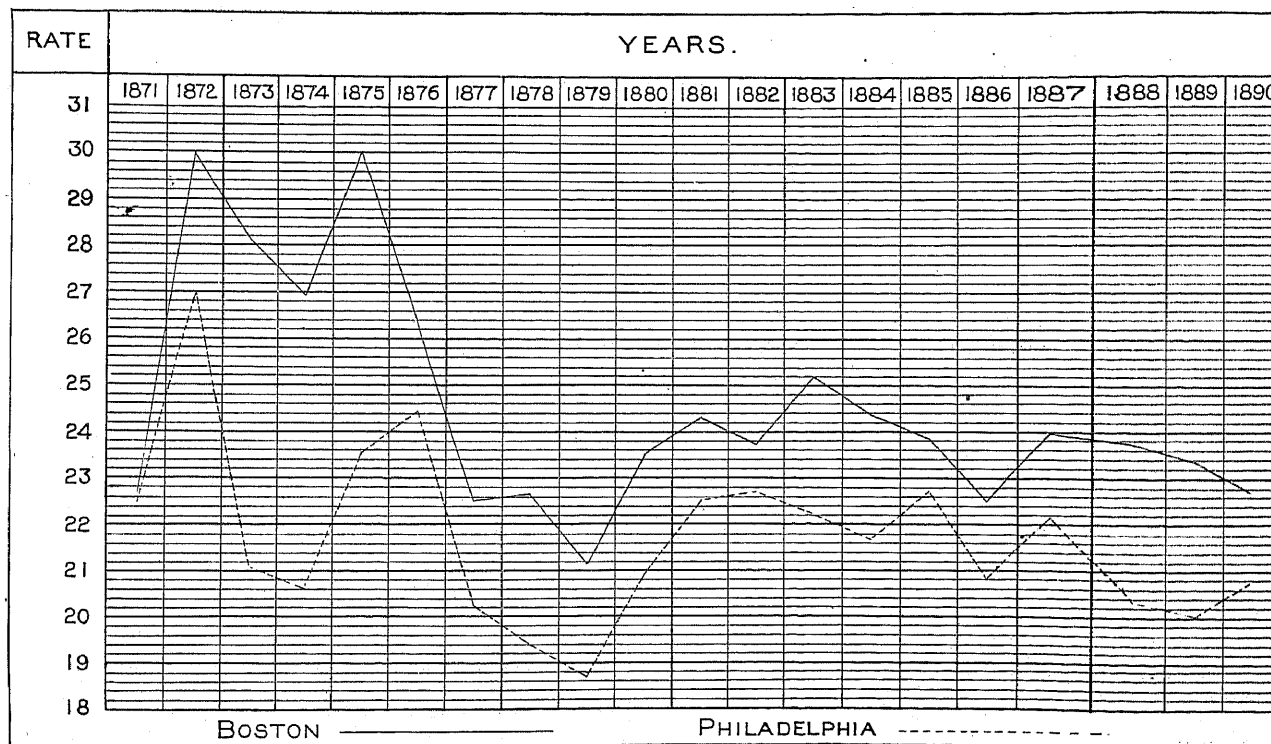
Table 3 shows for Boston and Philadelphia the death rates per 1,000 of population for each calendar year from 1871 to 1890, inclusive, stillbirths being excluded, and the population for each year being calculated by the usual geometrical progression formula from the censuses of 1870, 1880, and 1890.

TABLE 3.

YEARS.	DEATH RATES PER 1,000 OF POPULATION.		YEARS.	DEATH RATES PER 1,000 OF POPULATION.	
	Boston.	Philadelphia.		Boston.	Philadelphia.
1871.....	22.65	22.45	1881.....	24.33	22.55
1872.....	29.99	26.91	1882.....	23.76	22.70
1873.....	28.11	21.09	1883.....	25.19	22.24
1874.....	26.89	20.63	1884.....	24.36	21.69
1875.....	30.05	23.56	1885.....	23.84	22.71
1876.....	26.38	24.44	1886.....	22.40	20.80
1877.....	22.53	20.23	1887.....	23.93	22.11
1878.....	22.66	19.45	1888.....	23.72	20.30
1879.....	21.16	18.69	1889.....	23.37	20.03
1880.....	23.51	20.91	1890.....	22.70	20.76

The variations in the death rates of the two cities, exclusive of stillbirths, as contained in the preceding table, are shown graphically in the following diagram:

DIAGRAM I.



From the table and the diagram it will be seen that the death rate of Boston has been uniformly greater than that of Philadelphia, and that in general the death rates of the two cities have increased and decreased together, having been highest in 1872 and lowest in 1879.

A comparison with the corresponding table and diagram given in the report on the vital statistics of New York and Brooklyn shows that the annual variations in the death rates of all four cities during the 20 years 1871 to 1890 correspond to a considerable extent.

AGE.

The influence of age upon mortality must be studied in connection with distinctions of sex, color, and nativity, and some data for this purpose are given in the following tables for Boston and Philadelphia.

Table 4 shows the population of Boston on June 1, 1890, and the number in each group of ages per 100,000 population of all ages, with distinction of sex, color, nativity, and parental nativity.

VITAL STATISTICS.

TABLE 4.

SEX, COLOR, NATIVITY, AND PARENTAL NATIVITY.	POPULATION.								
	June 1, 1890.	Number at each age in 100,000 of all ages.							
		Under 15 years.	15 to 20 years.	20 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	65 years and over.
Aggregate.....	448,477	25,219	8,912	11,780	20,815	14,232	9,719	5,491	3,832
Males.....	217,754	26,111	8,730	11,282	21,211	14,429	9,765	5,179	3,291
Females.....	230,723	24,376	9,084	12,251	20,441	14,046	9,676	5,787	4,319
White.....	439,887	25,381	8,945	11,766	20,696	14,139	9,726	5,533	3,801
Males.....	213,128	26,298	8,773	11,259	21,036	14,311	9,767	5,220	3,336
Females.....	226,759	24,423	9,107	12,242	20,377	13,977	9,687	5,826	4,301
Native born.....	283,209	35,791	10,872	10,925	17,473	11,093	6,846	3,892	3,103
Males.....	140,336	36,362	10,771	10,914	17,648	11,141	6,752	3,762	2,650
Females.....	142,873	35,230	10,971	10,935	17,301	11,047	6,938	4,020	3,558
Both parents native.....	135,740	23,851	7,583	9,663	18,179	15,371	11,827	7,416	6,110
Males.....	67,447	24,237	7,658	9,839	18,883	15,307	11,671	7,195	5,210
Females.....	68,293	23,471	7,509	9,490	17,483	15,434	11,981	7,633	6,899
One or both parents foreign.....	147,469	46,781	13,899	12,086	16,822	7,157	2,261	650	344
Males.....	72,889	47,582	13,651	11,908	16,505	7,286	2,201	586	281
Females.....	74,580	45,998	14,142	12,259	17,133	7,030	2,320	712	406
Foreign born.....	156,678	6,425	5,463	13,286	26,522	19,643	14,932	8,497	5,232
Males.....	72,792	6,895	4,921	11,924	27,568	20,423	15,580	8,031	4,654
Females.....	83,886	6,017	5,933	14,467	25,616	18,966	14,371	8,901	5,729
Colored.....	8,590	19,453	7,206	12,538	26,892	19,010	9,360	3,387	2,154
Males.....	4,626	17,531	6,766	12,343	29,270	19,845	9,641	3,264	1,310
Females.....	3,964	21,695	7,720	12,765	24,117	18,037	9,031	3,532	3,103

Table 5 shows the population of Philadelphia on June 1, 1890, and the number in each group of ages per 100,000 population of all ages, with distinction of sex, color, and nativity.

TABLE 5.

SEX, COLOR, AND NATIVITY.	POPULATION.								
	June 1, 1890.	Number at each age in 100,000 of all ages.							
		Under 15 years.	15 to 20 years.	20 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	65 years and over.
Aggregate.....	1,046,964	27,920	9,579	11,274	19,282	13,351	9,236	5,451	3,907
Males.....	511,122	28,836	9,306	10,876	19,514	13,688	9,230	5,114	3,436
Females.....	535,842	27,046	9,839	11,654	19,061	13,029	9,243	5,773	4,355
White.....	1,006,590	28,130	9,606	11,171	19,115	13,232	9,263	5,531	3,952
Males.....	492,162	29,049	9,367	10,801	19,330	13,522	9,247	5,192	3,492
Females.....	514,428	27,251	9,834	11,525	18,969	12,055	9,277	5,856	4,393
Native born.....	738,341	35,923	11,184	11,275	17,863	11,059	6,563	3,436	2,697
Males.....	360,401	37,113	11,079	11,099	17,611	11,075	6,524	3,244	2,250
Females.....	377,940	34,783	11,285	11,443	18,104	11,043	6,601	3,618	3,123
Foreign born.....	268,249	6,680	5,261	10,886	22,560	19,213	16,692	11,299	7,409
Males.....	131,761	6,977	4,086	9,987	24,031	20,215	16,698	10,518	6,888
Females.....	136,488	6,393	5,815	11,754	21,140	18,246	16,687	12,054	7,911
Colored.....	40,374	22,678	8,914	13,833	23,451	16,310	8,590	3,460	2,764
Males.....	18,960	23,307	7,732	12,816	24,283	17,991	8,771	3,096	2,004
Females.....	21,414	22,121	9,961	14,733	22,714	14,822	8,429	3,783	3,437

BOSTON AND PHILADELPHIA.

5

It will be seen from these tables that the proportion of children under 15 years of age and of persons 65 years of age and upward—that is to say, the ages of greatest mortality—was decidedly smaller among the colored than among the white, and that the proportion of children under 15 years of age was much smaller among the foreign born than among the native.

Philadelphia had a considerably greater proportion of population in these age groups of heaviest mortality, amounting to about 3,500 in 100,000 of all ages, but the death rates were heavier in Boston in every age group.

Table 6 shows the death rates in Boston during the census year, stillbirths included, with distinction of 8 age groups and of sex, color, nativity, and parental nativity.

TABLE 6.

SEX, COLOR, NATIVITY, AND PARENTAL NATIVITY.	RATES PER 1,000 OF POPULATION.								
	All ages.	Age periods.							
		Under 15 years.	15 to 20 years.	20 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	65 years and over.
Aggregate.....	24.79	40.76	7.31	9.92	12.49	16.39	21.98	36.62	94.22
Males.....	26.08	43.63	7.26	10.99	12.93	17.73	23.75	38.22	97.46
Females.....	23.57	37.85	7.35	8.99	12.06	15.09	20.20	35.28	91.89
White.....	24.62	40.20	7.27	9.76	12.43	16.32	21.71	36.45	94.01
Males.....	25.96	43.18	7.22	10.88	12.85	17.54	23.50	38.02	97.19
Females.....	23.37	37.18	7.31	8.79	12.03	15.15	19.94	35.12	91.72
Native born.....	25.77	42.75	6.98	9.99	13.07	13.75	16.87	27.21	83.62
Males.....	27.44	45.84	6.75	11.10	14.01	15.16	16.99	31.25	88.73
Females.....	24.13	39.62	7.21	8.90	12.14	12.36	16.75	23.50	79.87
Both parents native.....	18.75	34.35	4.86	4.42	6.57	8.87	13.58	22.55	64.26
Males.....	19.48	37.19	5.23	4.82	6.12	9.49	13.72	26.38	66.88
Females.....	18.03	31.44	4.49	4.01	7.04	8.25	13.44	18.99	62.34
One or both parents foreign.....	28.77	43.72	7.66	13.58	18.38	20.56	23.10	29.23	96.46
Males.....	31.31	46.77	7.34	15.55	21.45	23.54	20.57	35.13	102.44
Females.....	26.28	40.64	7.96	11.70	15.50	17.55	25.43	24.48	92.41
Foreign born.....	22.10	12.22	8.30	9.42	11.45	18.55	25.22	43.79	103.94
Males.....	22.47	13.75	9.21	10.48	11.16	19.37	28.13	43.79	104.98
Females.....	21.77	10.70	7.64	8.65	11.73	17.79	22.48	43.79	103.20
Colored.....	33.29	78.40	9.69	17.64	14.72	18.98	36.07	51.55	113.51
Males.....	31.56	75.22	9.58	15.76	15.51	23.97	31.30	52.98	129.03
Females.....	35.32	81.40	9.80	19.76	13.60	12.59	41.90	50.00	105.69

VITAL STATISTICS.

Table 7 shows the death rates in Philadelphia during the census year, stillbirths included, with distinction of 8 age groups and of sex, color, and nativity.

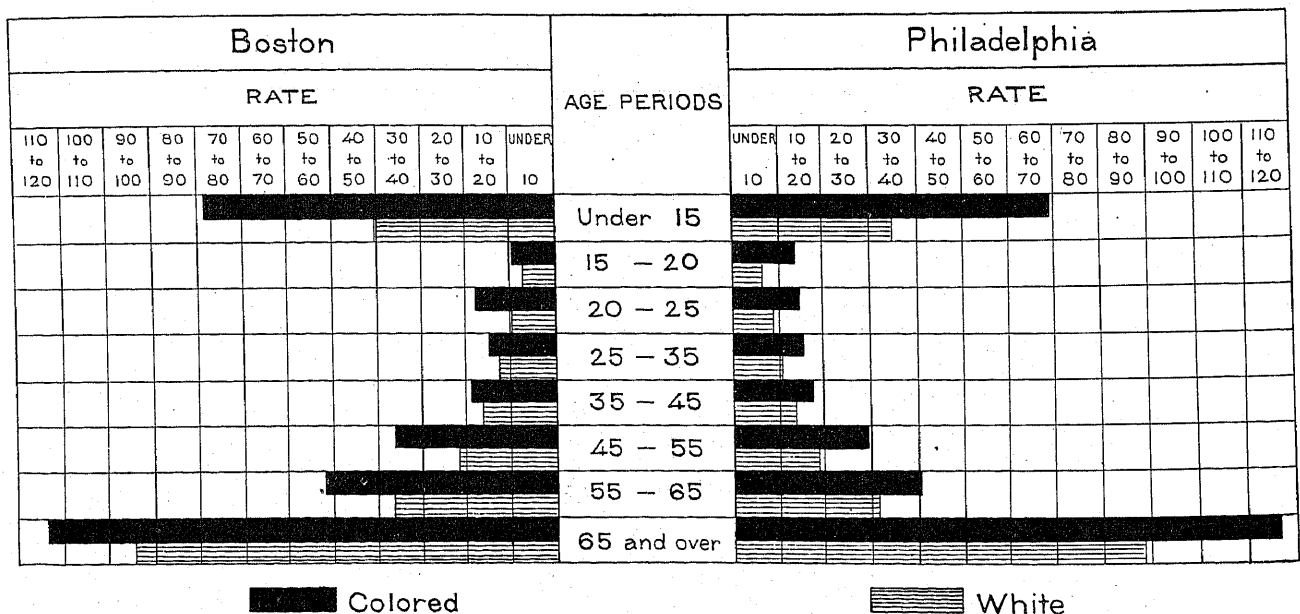
TABLE 7.

SEX, COLOR, AND NATIVITY:	RATES PER 1,000 OF POPULATION.								
	All ages.	Age periods.							
		Under 15 years.	15 to 20 years.	20 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	65 years and over.
Aggregate.....	22.67	35.96	6.44	9.08	11.06	13.77	19.36	31.77	89.63
Males.....	24.30	38.38	6.75	10.54	11.41	15.55	21.30	36.69	94.85
Females.....	21.12	53.51	6.16	7.78	10.71	11.99	17.51	27.61	85.70
White.....	22.28	34.89	6.17	8.81	10.85	13.60	18.98	31.56	88.88
Males.....	23.85	37.22	6.49	10.12	11.28	15.30	20.85	36.44	93.51
Females.....	20.79	32.51	5.89	7.64	10.43	11.91	17.20	27.42	85.35
Native born.....	22.80	36.84	6.20	8.64	10.74	12.55	17.85	29.61	89.25
Males.....	24.43	39.37	6.34	9.65	10.95	13.73	19.44	34.04	98.06
Females.....	21.25	34.26	6.07	7.70	10.55	11.43	16.35	25.82	82.78
Foreign born.....	19.98	5.52	5.95	9.04	10.34	14.55	19.21	32.04	85.84
Males.....	21.14	5.66	7.45	11.10	10.80	16.67	21.09	37.02	85.83
Females.....	18.86	5.39	4.79	7.36	9.84	12.29	17.39	27.84	85.85
Colored.....	32.42	69.24	13.61	14.50	15.21	17.16	29.41	40.09	116.49
Males.....	36.02	75.81	15.01	19.75	14.12	20.52	33.67	47.70	155.26
Females.....	29.23	63.12	12.06	10.46	16.24	13.55	25.48	34.57	96.47

It will be seen from these tables that the death rate of the males was greater than that of the females in every age group except for the colored of the age group 25 to 35 years; that the death rate of the colored for each sex was greater than that of the white in the aggregate, and especially so for those under 15 years of age and those 45 years of age and upward, and that the death rates of the foreign born were less than those of the native for both sexes in those under 15 years of age, but for the most part greater than those of the native for the adults of both sexes.

The following diagram indicates the differences between the death rates of the white and of the colored, stillbirths included, in these two cities, at different groups of ages during the census year:

DIAGRAM 2



The shaded maps, showing the relative mortality among the children under 5 years of age in different wards and districts in Boston and Philadelphia, should be carefully examined and compared with the corresponding maps for the mortality of the total population.

The death rates of the infants under 1 year of age require special consideration.

Table 8 shows for Boston and Philadelphia the death rates for the years ending May 31, 1880 and 1890, of the children under 1 year of age in each city, with distinction of sex, stillbirths being excluded.

TABLE 8.

CHARACTER OF RATES.	Sex.	BOSTON.		PHILADELPHIA.	
		1890	1880	1890	1880
Number of deaths of children under 1 year of age per 1,000 of population of corresponding age.	Total	261.34	225.05	230.13	189.80
	Male.....	283.05	243.81	250.11	205.51
	Female	238.59	206.22	209.77	173.94
Number of deaths during the census year per 1,000 children born within the year.	Total	226.08	199.80	202.09	168.76
	Male.....	241.38	209.76	217.23	180.68
	Female	209.57	189.14	186.32	156.46
Number of deaths under 1 year of age per 1,000 deaths of all ages.....	Total	218.68	238.18	238.44	227.69
	Male.....	238.35	262.61	250.71	241.21
	Female	198.54	214.49	225.06	213.44

From this table it appears that the mortality of infants of each sex was greater in Boston than in Philadelphia, both in 1880 and in 1890, and that in both places it was higher in 1890 than in 1880.

Table 9 shows the population under 1 year and under 5 years of age in Boston and in Philadelphia, and the proportion of the population in each age group per 100,000 population of all ages, according to the censuses of 1880 and 1890, with distinction of sex and color.

TABLE 9.

COLOR AND SEX.	Years.	POPULATION AT EACH AGE.				PROPORTION IN EACH AGE GROUP PER 100,000 OF ALL AGES.			
		Boston.		Philadelphia.		Boston.		Philadelphia.	
		Under 1 year.	Under 5 years.	Under 1 year.	Under 5 years.	Under 1 year.	Under 5 years.	Under 1 year.	Under 5 years.
Aggregate	1890	8,797	40,001	23,077	103,802	1,961.53	8,919.30	2,204.18	9,914.57
	1880	8,056	37,138	19,737	91,544	2,220.27	10,235.39	2,329.76	10,805.86
White males.....	1890	4,419	20,037	11,252	50,974	2,073.40	9,401.39	2,286.24	10,357.16
	1880	3,959	18,418	9,546	44,724	2,339.59	10,884.18	2,435.33	11,409.79
White females.....	1890	4,222	19,359	11,056	49,674	1,861.89	8,587.26	2,149.18	9,656.16
	1880	3,954	18,176	9,449	43,712	2,107.59	9,688.29	2,231.70	10,324.46
Colored males.....	1890	82	296	400	1,521	1,772.59	6,398.62	2,110.03	8,022.15
	1880	77	273	366	1,545	2,524.59	8,950.82	2,615.03	11,038.87
Colored females.....	1890	74	309	369	1,633	1,866.80	7,795.16	1,723.41	7,625.85
	1880	66	271	376	1,563	2,227.47	9,146.14	2,110.94	8,774.98

It will be seen that the decrease in the proportion of infantile population in 1890 as compared with 1880 was in each city greater among the colored than among the white.

VITAL STATISTICS.

Table 10 shows for the city of Boston the number of living children under 1 year of age on June 1, 1890, by 4 age groups, the proportion in each age group per 1,000 of population under 1 year of age, the number of deaths of children which occurred during the census year, and the number of deaths in each age group per 1,000 deaths under 1 year of age, with distinction of color, nativity, and parental nativity.

TABLE 10.

COLOR, NATIVITY, AND PARENTAL NATIVITY.	Under 1 year.	MONTHS PERIODS.			
		Under 3 months.	3 to 6 months.	6 to 9 months.	9 to 12 months.
Population June 1, 1890:					
Total	8,797	2,085	2,353	2,491	1,868
White.....	8,641	2,040	2,315	2,448	1,838
Native born.....	8,578	2,036	2,310	2,422	1,810
Both parents native.....	2,480	583	670	712	515
One or both parents foreign.....	6,098	1,453	1,640	1,710	1,295
Foreign born.....	63	4	5	26	28
Colored	156	45	38	43	30
Proportion in each age group:					
Total	1,000	237	268	283	212
White.....	1,000	236	268	283	213
Native born.....	1,000	238	269	282	211
Both parents native.....	1,000	235	270	287	208
One or both parents foreign.....	1,000	238	269	281	212
Foreign born.....	1,000	64	79	413	444
Colored	1,000	288	244	276	192
Deaths:					
Total	2,903	1,711	490	383	319
White	2,826	1,670	478	366	312
Native born.....	2,806	1,665	474	360	307
Both parents native.....	766	470	126	97	73
One or both parents foreign.....	2,040	1,195	348	263	234
Foreign born	20	5	4	6	5
Colored	77	41	12	17	7
Number of deaths in each age group per 1,000-under 1 year:					
Total	1,000	589	169	132	110
White	1,000	591	169	130	110
Native born	1,000	593	169	128	110
Both parents native.....	1,000	614	164	127	95
One or both parents foreign.....	1,000	586	170	129	115
Foreign born	1,000	250	200	300	250
Colored	1,000	532	156	221	91

Table 11 shows for the city of Philadelphia the number of living children under 1 year of age on June 1, 1890, by 4 age groups, the proportion in each age group per 1,000 of population under 1 year of age, the number of deaths of children which occurred during the census year, and the number of deaths in each age group per 1,000 deaths under 1 year of age, with distinction of color and nativity.

TABLE 11.

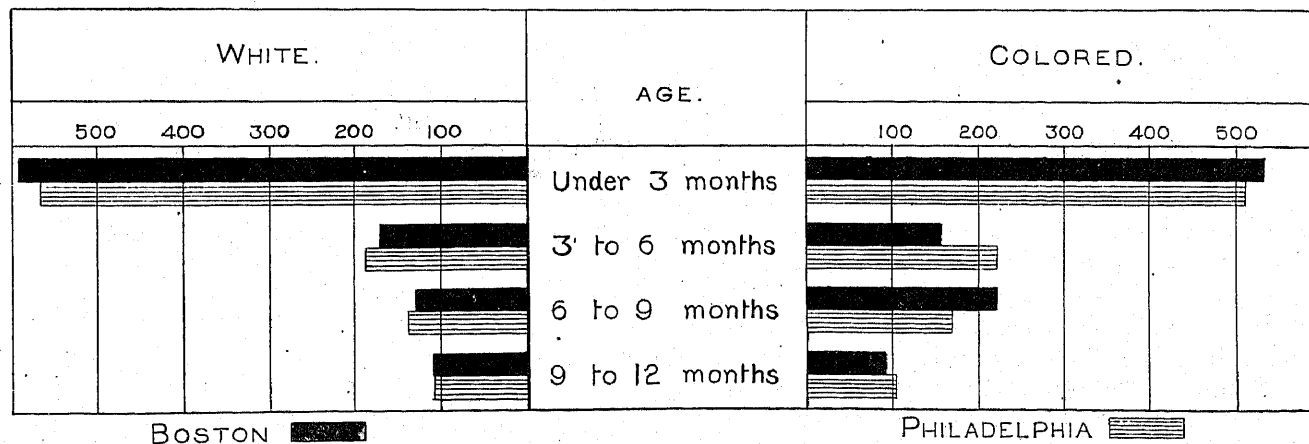
COLOR AND NATIVITY.	Under 1 year.	MONTHS PERIODS.			
		Under 3 months.	3 to 6 months.	6 to 9 months.	9 to 12 months
Population June 1, 1890:					
Total	23, 077	5, 356	6, 219	6, 402	5, 100
White	22, 308	5, 178	5, 995	6, 194	4, 941
Native born	22, 233	5, 167	5, 968	6, 172	4, 926
Foreign born	75	11	27	22	15
Colored.....	769	178	224	208	159
Proportion in each age group:					
Total	1, 000	232	270	277	221
White	1, 000	232	269	278	221
Native born	1, 000	232	268	278	222
Foreign born	1, 000	147	360	203	200
Colored.....	1, 000	231	291	271	207
Deaths:					
Total	6, 762	3, 789	1, 291	946	736
White	6, 350	3, 579	1, 200	877	694
Native born	6, 340	3, 577	1, 194	875	694
Foreign born	10	2	6	2
Colored.....	412	210	91	69	42
Number of deaths in each age group per 1,000 under one year:					
Total	1, 000	560	191	140	109
White	1, 000	564	189	138	109
Native born	1 000	564	188	138	110
Foreign born	1, 000	200	600	200
Colored.....	1, 000	510	221	167	102

It will be seen from these tables that over one-half of the deaths of children under 1 year of age occurred during the first 3 months of life, the proportion being 589 in Boston and 560 in Philadelphia.

The figures for the foreign born in each city are so small that the death rates have no significance. For the white, the proportion of deaths under 3 months of age to 1,000 deaths under 1 year of age was greater in Boston (591) than in Philadelphia (564), while the proportion of deaths in the age groups, "3 to 6 months" and "6 to 9 months", was greater in Philadelphia than in Boston.

The following diagram indicates the relative proportion of deaths in the two cities at each of these age groups in 1,000 deaths under 1 year of age, with distinction of white and colored:

DIAGRAM 3.



VITAL STATISTICS.

Table 12 shows for Boston and Philadelphia the comparative number of deaths from infantile diseases in 1,000 total deaths from all causes, excluding stillbirths, during the census years 1880 and 1890.

TABLE 12.

CAUSES.	BOSTON.		PHILADELPHIA.	
	1890	1880	1890	1880
Total infantile diseases.....	190.53	206.25	205.42	195.84
Measles.....	0.57		1.53	2.07
Diarrheal diseases.....	24.83	24.83	15.12	10.58
Cholera infantum.....	35.38	40.73	28.44	41.21
Inanition.....	9.51	12.35	24.54	17.63
Whooping cough.....	5.14	8.80	2.83	3.80
Premature birth.....	16.84	15.50	7.54	10.21
Malformation.....	2.19	8.15	1.53	1.15
Debility and atrophy.....	35.10	24.04	43.87	40.12
Anæmia.....		1.65	0.09	0.18
Hydrocephalus.....	6.37	8.28	2.38	4.74
Scrofula and tabes.....	1.62	1.58	1.35	1.22
Meningitis and diseases of the brain.....	11.22	10.12	17.00	11.43
Trismus nascentium.....	0.29	0.66	1.12	0.55
Convulsions.....	8.47	9.20	28.13	25.89
Croup and angina.....	0.57	3.02	1.06	2.13
Bronchitis.....	13.70	19.57	8.75	8.02
Pneumonia.....	13.51	16.95	13.77	9.97
Dentition.....	0.76	2.89	1.17	1.03
"Others of class" digestive.....	1.90	1.84	1.79	1.03
Exposure and neglect.....		0.39	0.04	0.06
Suffocation.....	2.47	1.31	2.78	2.74

It will be seen from the table that the proportion of deaths due to these infantile diseases was greater in 1880 in Boston than it was in 1890, while in Philadelphia it was greater in 1890 than it was in 1880.

RACE.

Table 83 shows the number of deaths from each specified disease and class of diseases during the 6 years ending May 31, 1890, among the white population of Boston, with distinction of sex, and by quinquennial age periods.

The total number of decedents reported by this table was 58,431, of whom 29,404 were males and 29,027 were females.

Table 84 shows the number of deaths from each specified disease and class of diseases during the 6 years ending May 31, 1890, among the colored population of Boston, with distinction of sex, and by quinquennial age periods.

The total number of decedents reported by this table was 1,590, of whom 844 were males and 746 were females.

Table 85 shows the number of deaths in Boston from each specified disease and class of diseases during the 6 years ending May 31, 1890, among those whose mothers were born in the United States, with distinction of sex, and by quinquennial age periods.

The total number of decedents reported by this table was 18,969, of whom 9,653 were males and 9,316 were females.

Table 86 shows the number of deaths in Boston from each specified disease and class of diseases during the 6 years ending May 31, 1890, among those whose mothers were born in England and Wales, with distinction of sex, and by quinquennial age periods.

The total number reported by this table was 2,149, of whom 1,076 were males and 1,073 were females.

Table 87 shows the number of deaths in Boston from each specified disease and class of diseases during the 6 years ending May 31, 1890, among those whose mothers were born in Ireland, with distinction of sex, and by quinquennial age periods.

The total number of this group was 24,726, of whom 12,034 were males and 12,692 were females.

Table 88 shows the number of deaths in Boston from each specified disease and class of diseases during the 6 years ending May 31, 1890, among those whose mothers were born in Germany, with distinction of sex, and by quinquennial age periods.

The total number of decedents in this group was 1,983, of whom 1,094 were males and 889 were females.

Table 89 shows the number of deaths in Boston from each specified disease and class of diseases during the 6 years ending May 31, 1890, among those whose mothers were born in Canada, with distinction of sex, and by quinquennial age periods.

The total number of decedents in this group was 5,167, of whom 2,492 were males and 2,675 were females.

Table 13 shows for Boston the average annual death rates due to each specified cause per 100,000 of mean population during the 6 years ending May 31, 1890, with distinction of color, nativity, and parental nativity.

TABLE 13.

CAUSES.	Aggregate.	WHITE.					Colored.
		Total.	Native.			Foreign.	
			Total.	Both par- ents native.	One or both parents foreign.		
All causes.....	2,387.44	2,371.18	2,493.86	2,059.11	2,891.01	2,151.50	3,191.62
Scarlet fever.....	25.42	25.73	36.87	23.84	48.77	5.78	10.04
Typhoid fever.....	39.02	38.43	29.47	23.71	34.73	54.48	68.25
Malarial fever.....	1.75	1.66	1.52	2.12	0.97	1.93	6.02
Diphtheria.....	96.54	97.68	139.83	89.81	185.51	22.20	40.15
Croup.....	27.96	28.24	41.93	21.46	60.63	3.74	14.05
Diarrheal diseases.....	214.28	214.15	296.48	166.12	415.56	66.71	220.80
Consumption.....	386.51	378.90	320.44	190.23	439.40	483.60	762.78
Pneumonia.....	221.40	219.06	200.29	176.18	222.30	252.67	337.23
Measles.....	11.61	11.73	16.95	7.02	26.02	2.38	6.02
Whooping cough.....	19.49	18.83	28.84	16.20	40.30	0.91	52.19
Cancer and tumor.....	73.55	74.10	54.64	91.14	21.30	108.95	46.17
Heart disease and dropsy.....	150.36	148.85	121.30	158.57	87.25	198.20	224.82
Childbirth and puerperal diseases.....	14.92	14.89	10.43	9.80	11.01	22.88	16.06
Diseases of the liver.....	23.43	23.78	17.83	21.99	14.04	34.43	6.02
Diseases of the nervous system.....	243.71	243.61	271.94	278.19	266.23	192.87	248.91
Diseases of the urinary organs.....	84.84	84.25	68.93	90.08	49.62	111.67	114.42
Old age.....	44.35	44.72	26.25	50.87	3.75	77.81	26.09
Stillbirths.....	28.84	28.65	44.65	29.01	58.93	-----	38.14
All other causes.....	670.08	664.72	757.88	607.64	895.13	497.87	935.40
Unknown.....	9.39	9.21	8.92	7.68	10.04	9.74	18.07

Table 91 shows the number of deaths from each specified disease and class of diseases during the 6 years ending May 31, 1890, among the white population of Philadelphia, with distinction of sex, and by quinquennial age periods.

The total number of decedents reported by this table was 127,556, of whom 65,523 were males and 62,033 were females.

Table 92 shows the number of deaths from each specified disease and class of diseases during the 6 years ending May 31, 1890, among the colored population of Philadelphia, with distinction of sex, and by quinquennial age periods.

The total number of decedents reported by this table was 7,322, of whom 3,440 were males and 3,882 were females.

Table 93 shows the number of deaths in Philadelphia from each specified disease and class of diseases during the 6 years ending May 31, 1890, among persons born in the United States, with distinction of sex, and by quinquennial age periods.

The total number of decedents reported by this table was 110,556, of whom 56,193 were males and 54,363 were females.

Table 94 shows the number of deaths in Philadelphia from each specified disease and class of diseases during the 6 years ending May 31, 1890, among persons born in England and Wales, with distinction of sex, and by quinquennial age periods.

The total number of decedents reported by this table was 2,136, of whom 1,174 were males and 962 were females.

Table 95 shows the number of deaths in Philadelphia from each specified disease and class of diseases during the 6 years ending May 31, 1890, among persons born in Ireland, with distinction of sex, and by quinquennial age periods.

The total number of decedents reported by this table was 11,916, of whom 5,579 were males and 6,337 were females.

Table 96 shows the number of deaths in Philadelphia from each specified disease and class of diseases during the 6 years ending May 31, 1890, among persons born in Germany, with distinction of sex, and by quinquennial age periods.

VITAL STATISTICS.

The total number of decedents reported by this table was 5,960, of whom 3,413 were males and 2,547 were females.

Table 97 shows the number of deaths in Boston from each specified disease and class of diseases during the 6 years ending May 31, 1890, with distinction of color and of birthplace of the mother of the decedent.

Table 98 shows the number of deaths in Philadelphia from each specified disease and class of diseases during the 6 years ending May 31, 1890, with distinction of color and of birthplaces of the decedents.

Table 14 shows for Philadelphia the average annual death rates due to each specified cause per 100,000 of mean population during the 6 years ending May 31, 1890, with distinction of color and nativity.

TABLE 14.

CAUSES.	Aggregate.	WHITE.			Colored.
		Total.	Native.	Foreign.	
All causes	2,303.43	2,269.19	2,562.31	1,470.26	3,124.81
Scarlet fever	26.18	26.86	35.84	2.39	9.82
Typhoid fever	69.35	69.65	73.10	60.25	62.31
Malarial fever	7.21	7.19	8.22	4.37	7.68
Diphtheria	50.48	51.48	69.30	2.92	26.46
Croup	47.82	49.03	66.41	1.66	18.78
Diarrheal diseases	156.11	155.30	196.16	43.94	175.40
Consumption	297.87	287.06	299.20	253.72	557.36
Pneumonia	164.17	158.77	174.79	115.13	293.62
Measles	10.67	10.67	14.37	0.60	10.67
Whooping cough	11.39	10.69	14.52	0.27	28.17
Cancer and tumor	54.73	55.17	48.15	74.30	44.38
Heart disease and dropsy	146.27	142.10	137.44	154.83	246.25
Childbirth and puerperal diseases	10.06	9.98	9.61	11.00	11.95
Diseases of the liver	27.58	28.32	24.71	38.18	9.82
Diseases of the nervous system	318.83	315.86	373.38	159.07	390.07
Diseases of the urinary organs	74.90	73.44	72.54	75.89	110.11
Old age	46.08	45.99	37.13	70.12	48.23
Stillbirths	117.68	115.38	157.72	172.84
All other causes	656.01	646.23	743.50	381.10	890.67
Unknown	10.02	10.02	10.19	9.54	10.24

In tables showing the death rates by birthplaces of mothers the colored have been excluded from those given under birthplace of mother, United States, the number of foreign born colored being so small as to make no appreciable difference in the rates.

Table 15 shows for Boston for the 6-year period the death rates per 1,000 of certain races, as indicated by color and by birthplaces of mothers, with distinction of under 15 years and 15 years of age and upward, including stillbirths.

TABLE 15.

COLOR AND BIRTHPLACES OF MOTHERS.	BOSTON.		
	All ages.	Under 15 years.	15 years and over.
White	23.71	38.71	18.68
Colored	31.92	77.67	20.95
United States (white)	21.30	37.76	14.79
England and Wales	17.75	30.36	13.62
Ireland	27.27	39.03	24.12
Scotland	17.87	30.68	14.95
France	15.66	27.78	12.91
Germany	17.17	28.44	13.52
Canada	20.34	42.38	10.73
Scandinavia	16.26	38.53	8.88
Hungary	21.41	42.79	10.42
Bohemia	22.96	45.66	9.49
Italy	20.65	44.53	8.23
Other foreign countries	10.69	33.14	8.76

The preceding table shows that during the 6-year period the average annual death rate was greatest among the colored (31.92) and the children of mothers born in Ireland (27.27), and least among the children of mothers born in France (15.66).

The mortality among the colored is especially excessive among the children. For those 15 years of age and upward the death rate is greater among the children of Irish mothers than in any other class. This appears clearly in the following diagram, which shows for the colored and for the white, by birthplaces of mothers arranged in the order of the magnitude of their death rates, the relative death rates for those under 15 years and 15 years of age and upward in Boston during the 6-year period:

DIAGRAM 4.

BOSTON

Death rate per 1000 of population:													
Under 15 years							COLOR AND BIRTHPLACES OF MOTHERS (white)	15 years and over					All ages RATE
RATE								RATE					
70	60	50	40	30	20	10		10	20	30	40	50	
							WHITE						23.71
							COLORED						31.92
							Persons whose mothers were born in -						
							IRELAND						27.27
							BOHEMIA						22.96
							HUNGARY						21.41
							UNITED STATES						21.30
							ITALY						20.65
							CANADA						20.34
							SCOTLAND						17.87
							ENGLAND AND WALES						17.75
							GERMANY						17.17
							OTHER FOREIGN COUNTRIES						16.69
							SCANDINAVIA						16.26
							FRANCE						15.66

VITAL STATISTICS.

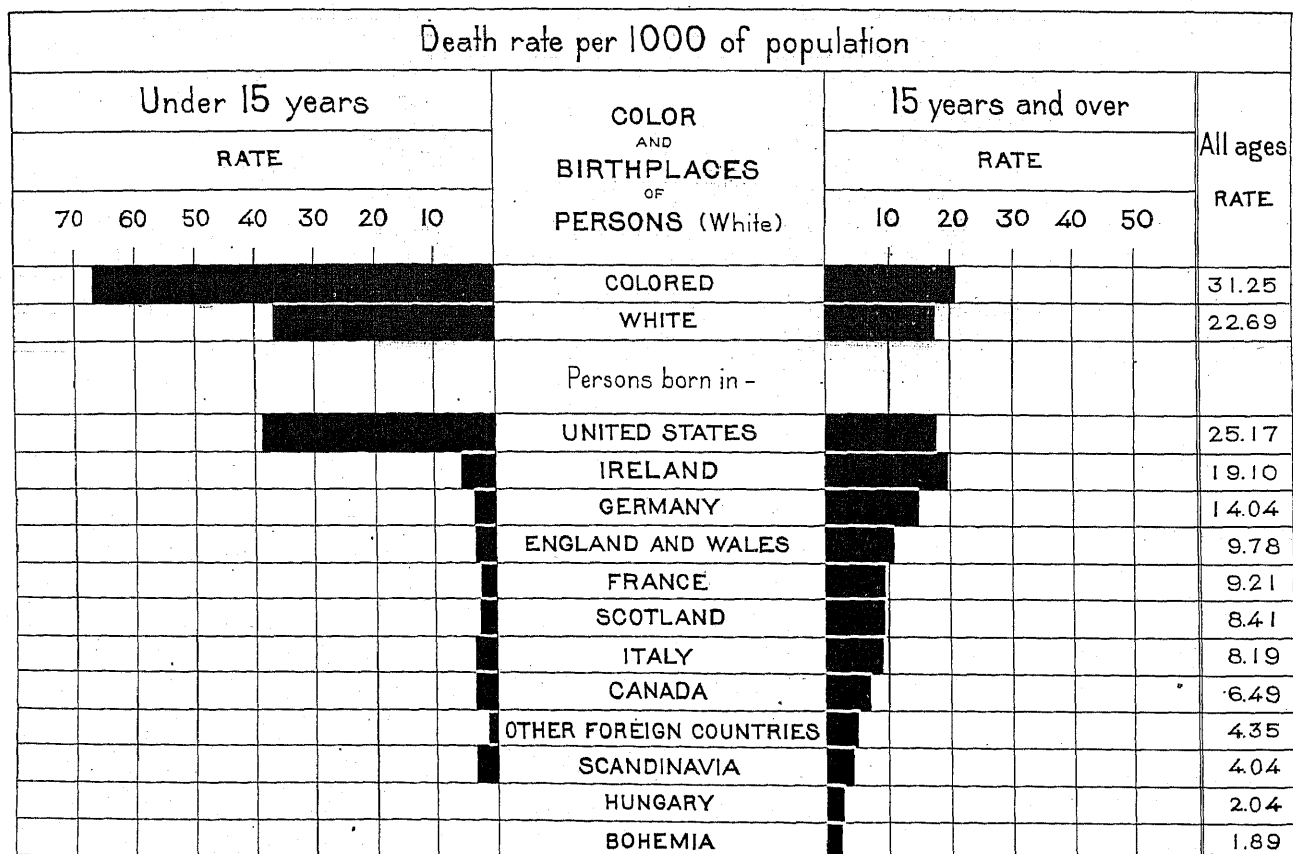
Table 16 shows for Philadelphia for the 6 years ending May 31, 1890, the average annual death rates, with distinction of 2 groups of ages, of white and colored, and of birthplaces of persons.

TABLE 16.

COLOR AND BIRTHPLACES OF PERSONS.	PHILADELPHIA.		
	All ages.	Under 15 years.	15 years and over.
White	22.69	36.68	17.27
Colored	31.25	66.88	20.94
United States (white)	25.17	38.83	17.57
England and Wales	9.78	3.35	10.65
Ireland	19.10	5.62	19.43
Scotland	8.41	2.74	9.30
France	9.21	2.51	9.61
Germany	14.04	3.61	14.70
Canada	6.49	3.49	6.82
Scandinavia	4.04	3.49	4.08
Hungary	2.04		2.42
Bohemia	1.89		2.07
Italy	8.19	3.50	8.99
Other foreign countries	4.35	1.61	4.89

The following diagram shows for the colored and for the white, by birthplaces of persons arranged in the order of the magnitude of their death rates, the relative death rates for those under 15 years and 15 years of age and upward in Philadelphia during the 6-year period:

DIAGRAM 5
PHILADELPHIA



The preceding table and diagram, when compared with the corresponding ones for Boston, show the fallacy of the results obtained in attempting to estimate the influence of race upon mortality from data derived from birthplaces of persons only. The death rate of the colored (31.25) is, as usual, greater than that of the white, being about the same as the death rate for the colored in Boston (31.92) and in Brooklyn (30.54), and a little lower than the corresponding rates in the District of Columbia (33.25) and in Baltimore (32.60). The death rate of the native white (25.17) is greater than that of any of the groups of foreign white, because the white born in the United States includes a larger number of young children than any of the other groups, and the only rates in this table which have any real significance are those for persons 15 years of age and upward, and even these are not fairly comparable.

The following diagram shows a comparison of the rates for those 15 years of age and upward in Boston by birthplaces of mothers, and in Philadelphia by birthplaces of persons, the groups being arranged in the order of magnitude of the aggregate death rates in Boston:

DIAGRAM 6

All Ages Rate	BOSTON				COLOR AND BIRTHPLACE	PHILADELPHIA				All Ages Rate
	20	15	10	5		5	10	15	20	
31.92					COLORED					31.25
23.71					WHITE					22.69
	OF MOTHERS				BIRTHPLACE	OF PERSONS				
27.27					IRELAND					19.10
22.96					BOHEMIA					1.89
21.41					HUNGARY					2.04
21.30					UNITED STATES (White)					25.17
20.65					ITALY					8.19
20.34					CANADA					6.49
17.87					SCOTLAND					8.41
17.75					ENGLAND AND WALES					9.78
17.17					GERMANY					14.04
16.69					OTHER FOREIGN COUNTRIES					4.35
16.25					SCANDINAVIA					4.04
15.66					FRANCE					9.21

It will be seen from this diagram that in a general way the differences in the death rates of those 15 years of age and upward of different races correspond, whether the classification be made by the birthplace of the mother or by the birthplace of the decedent himself, but that nevertheless the order is a little different for the two methods. In either case the heavier death rates occur among the Irish, the natives, the English, Scotch, and Germans, while the lower death rates are found among the Bohemians, Hungarians, Scandinavians, and Italians.